Laboratory	**Borregaard South Asia Private Limited, Plot: A-80, T. T. C. Industrial Area, Thane Belapur Road, Khairane MIDC, Navi Mumbai, Maharashtra**		
Accreditation Standard	**ISO/IEC 17025: 2005**		
Certificate Number	**TC-6513** ***(in lieu of T-3595 & T-3596)***	**Page 1 of 4**	
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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection

CHEMICAL TESTING

I.	**BUILDING MATERIAL**			
1.	**Cement (OPC,PPC & PSC)**	Insoluble Residue	IS 4032	1.0% to 40%
		Loss On Ignition	IS 4032	1.0% to 10%
		Silica Content (SiO_2)	IS 4032	15.0% to 40%
		Alumina (Al_2O_3)	IS 4032	1.0% to 14.0%
		Ferric Oxide (Fe_2O_3)	IS 4032	1.0% to 7.0%
		Calcium Oxide (CaO)	IS 4032	30.0% to 70.0%
		Sulfuric Anhydride (SO_3)	IS 4032	0.5% to 5.0%
		Magnesia (MgO)	IS 4032	0.2% to 12.0%
		Chloride (Cl^-)	IS 4032	0.004% to 0.5%
2.	**Admixture**	pH	IS 9103	0.3 to 14.0
		Ash Content	IS 9103	0.3 to 25%
		Dry Material Content	IS 9103	1.0 to 95%
		Relative Density	IS 9103	0.1 to 2.0
		Chloride Content	IS 6925	0.007 to 3.5%
3.	**Pozzolana (Fly Ash, Slag & Micro-Silica)**	Insoluble Residue	IS 1727	5.0% to 96%
		Loss of Ignition	IS 1727	0.1 % to 12.0%
		Silica Content (SiO_2)	IS 1727	1% to 95%
		Combined Ferric Oxide and Alumina ($Al_2O_3 + Fe_2O_3$)	IS 1727	5% to 45%
		Calcium Oxide (CaO)	IS 1727	0.01 % to 30%
		Sulfuric Anhydride (SO_3)	IS 1727	0.01% to 10%
		Magnesia (MgO)	IS 1727	0.01% to 10%
		Moisture Content	IS 15388	0.01% to 10%
II	**WATER**			
1.	**Construction Water**	pH	IS 3025 (Part 11)	0.1 to 14
		Acidity	IS 3025 (Part 22)	0.1ml to 10ml

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Organic Impurities	IS 3025 (Part 18)	1 mg/L to 4000mg/L
		Inorganic Impurities	IS 3025 (Part 18)	1 mg/L to 10000mg/L
		Sulphate (SO_3)	IS 3025 (Part 24)	1 mg/L to 2000mg/L
		Chloride (CL-)	IS 3025 (Part 32)	3 mg/L to 5000mg/L
		Total Suspended solids	IS 3025 (Part 17)	10 mg/L to 3000mg/L
		Alkalinity	IS 3025 (Part 23)	0.4ml to 40ml
		Total Hardness (as $CaCO_3$/L)	IS 3025 (Part 21)	1 mg/L to 10000mg/L
III	**METAL & ALLOYS**			
1.	**Steel**	Carbon	IS 228 (Part 1)	0.05% to 2.5%
		Sulphur	IS 6226 (Part 2)	0.01% to 0.2%
		Phosphorus	IS 228 (Part 3)	0.001% to 0.2%

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		MECHANICAL TESTING		
I.	**BUILDING MATERIALS**			
1.	**Fine Aggregate**	Grading	IS 2386 (Part 1)	4.75 mm to 75micron
		Material Finer than 75 microns IS Sieve	IS 2386 (Part 1)	1% to 25%
		Specific Gravity	IS 2386 (Part 3)	1.5 to 3.5
		Water Absorption	IS 2386 (Part 3)	0.5% to 10%
		Bulking of Fine Aggregate	IS 2386 (Part 3)	1% to 50%
		Bulk Density	IS 2386 (Part 3)	1 kg/L to 2.5 kg/L
		Soundness of Aggregate (By Na_2SO_4)	IS 2386 (Part 5)	0.1% to 20%
2.	**Coarse Aggregate**	Grading	IS 2386 (Part 1)	4.75 mm to 40.0 mm
		Specific Gravity	IS 2386 (Part 3)	1.5% to 3.5
		Water Absorption	IS 2386 (Part 3)	0.5% to 10%
		Flakiness Index	IS 2386 (Part 1)	1% to 70%
		Elongation Index	IS 2386 (Part 1)	1% to 70%
		Crushing Value	IS 2386 (Part 4)	5% to 60%
		Impact Value	IS 2386 (Part 4)	5% to 60%
		10% Fine Value	IS 2386 (Part 4)	5 kN to 600 kN
		Bulk Density	IS 2386 (Part 3)	1 kg/L to 3.0 kg/L
		Los Angeles Abrasion value	IS 2386 (Part 4)	1% to 60%
		Soundness of Aggregate (By Na_2SO_4)	IS 2386 (Part 5)	0.1% to 20%
3.	**Cement (OPC, PPC & PSC)**	Consistency	IS 4031 Part 4	10% to 45%
		Initial Setting Time	IS 4031 Part 5	15 min to 350 min
		Final Setting Time	IS 4031 Part 5	100 min to 600 min
		Fineness by Blaine's air permeability	IS 4031 Part 2	100 m^2/kg to 500 m^2/kg
		Soundness by Le-Chattelier Method	IS 4031 Part 3	0.1 mm to 10 mm

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Compressive Strength	IS 4031 Part 6	5 Mpa to 80 Mpa
		Density	IS 4031 Part 11	1.5 g/cc to 4.0 g/cc
4.	**Pozzolana Material (Fly Ash, Micro Silica)**	Residue on 45Micron IS Sieve	IS 1727	0.1% to 99%
		Fineness by Blaine's Air Permeability	IS 1727	100 m^2/kg to 800 m^2/kg
		Soundness by Le-Chattelier Method	IS 1727	0.1 mm to 10 mm
		Initial Setting Time	IS 1727	15 min to 350 min
		Final Setting Time	IS 1727	100 min to 600 min
		Compressive Strength	IS 1727	10 Mpa to 80 Mpa
		Specific Gravity	IS 1727	1.5 g/cc to 3.5 g/cc
5.	**Hardened Concrete**	Compressive strength	IS 516	10 Mpa to 80 Mpa
6.	**Silica Fume**	Compressive strength	IS 15388	10 Mpa to 90 Mpa

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